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22. (Amended)

The process of claim [1] <sup>43</sup>~~96~~, wherein said disposing of conductive material comprises applying a liquid comprising conductive material to the [one or more channels] substrate.

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25. (Amended)

The process of claim [1] <sup>43</sup>~~96~~, wherein said disposing of conductive material comprises

applying the conductive material dissolved in a solvent or dispersed in a dispersant to the [one or more channels] substrate; and

removing the solvent or dispersant from the applied conductive material to form a conductive trace [in the one or more channels] on the substrate.

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32. (Amended)

The process of claim [1] <sup>43</sup>~~96~~, wherein the conductive material is [applied to] disposed on the [channel] substrate as a conductive ink or paste.

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34. (Amended)

The process of [claims 1-3] <sup>43</sup>~~claim 96~~, wherein the conductive material comprises a binder, and the process further comprises the step of: curing the binder [in the one or more channels].

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35. (Amended)

The process of claim [1] <sup>43</sup>~~96~~, wherein the conductive material is applied [to the channels] as a liquid precursor.

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36. (Amended)

The process of claim [31] <sup>36</sup>~~35~~, wherein said conductive material is applied as multiple applications of the liquid precursor.

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37. (Amended)

The process of [claims 1-3] <sup>43</sup>~~claim 96~~, further comprising the step of applying a membrane layer over the [one] two or more electrodes.

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45. (Amended)

The process of [claims 1-3] <sup>43</sup>~~claim 96~~, further comprising the step:

forming an enlargement at one end of each of the [one] two or more electrodes, the enlargement forming one or more contact pads.

a<sup>4</sup> 46. (Amended) The process of claim 45, wherein when the [one] two or more electrodes are formed on two surfaces of the substrate, vias are formed at one or more of the enlargements to form the one or more contact pads on one surface of the substrate.

a<sup>9</sup> 52. (Amended) The process of claim [52] 51, wherein the one or more channels has a depth of 25  $\mu\text{m}$  or less.

57. (Amended) The process of [claims 1-3] claim 96, wherein at least one of said [one] two or more electrodes comprises a temperature sensor.

a<sup>5</sup> 58. (Amended) The process of any of claims 1-3, wherein said product sensor is adapted for *in vivo* use.

59. (Amended) The process of any of claims 1-3, wherein said product sensor is adapted for *in vitro* use.

a<sup>6</sup> 61. (Amended) The process of [claims 1-3] claim 96, wherein said [forming one or more electrodes] disposing a conductive material comprises forming a plurality of electrodes on a surface of the substrate.

a<sup>7</sup> 68. (Amended) The process of [claims 1-3] claim 96, wherein said [forming one or more electrodes] disposing a conductive material comprises forming a plurality of conductive traces on the substrate with a distance between conductive traces of 150  $\mu\text{m}$  or less.

a<sup>8</sup> 70. (Amended) The process of [claims 1-3] claim 96, further comprising the step of bonding a membrane layer to a surface of the substrate to cover at least one of the [one] two or more electrodes.